REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claim 1 has been amended to remove any ambiguity that "the portions of the heated glass sheet having a viscosity of not lower than 10^5 Pa·s and not higher than 10^8 Pa·s are pressed against the bending surface in the bending step." New Claim 14 instead recites that the entirety of the glass sheet has been heated to have a viscosity of not lower than 10^5 Pa·s and not higher than 10^8 Pa·s. Basis for this is inherent from the objects described in the disclosure and the arrangement of the heater in Fig. 2. Basis for new Claim 15 is found at page 9, lines 21-24.

Claims 1-9 and 11 were again rejected under 35 U.S.C. § 103 as being obvious over Tomozane et al. Although the examiner had indicated, in the interview of June 7, 2007 that amended Claim 1 "appears to define over Tomozane et al," it is Applicants understanding from the "Response to Arguments" portion of the outstanding Office Action that the examiner has reconsidered this because he deems that Claim 1 did not require "that the entirety of the sheet be heated" or "require that the portion of the sheet heated to the viscosity range be placed in pressing contact against the bending surface" (p. 9). In view of this, Claim 1 now recites:

> bending the glass sheet by pressing portions of the heated glass sheet having a viscosity of not lower than 10^5 Pa·s and not higher than 10^8 Pa·s against the bending surface, wherein the portions of the heated glass sheet having a viscosity of not lower than 10^5 Pa·s and not higher than 10^8 Pa·s are pressed against the bending surface in the bending step.

New Claim 14 instead recites that the entirety of the glass sheet has been heated to have a viscosity of not lower than 10^5 Pa·s and not higher than 10^8 Pa·s. It is respectfully submitted that the claims now unambiguously require that the sheet portion placed in pressing contact with the bending surface be heated to the claimed viscosity range, and define over this reference.

I. The present invention is entirely unrelated to Tomozane et al.

As a threshold matter, Applicants wish to reemphasize that the present invention is based on bending using a physical phenomenon, and for a purpose, that is entirely unrelated to Tomozane et al, as is evident from the fact that the present invention has no classification codes overlapping with Tomozane et al in terms of USPTO or IPC classification Tomozane et al is concerned with simple bending or folding of a flat glass sheet along a single fold line without using a press, to produce two *flat* sections that are connected at the fold line. It thus provides "a shaped glass sheet with a very sharp bend and substantially flat straight sections extending from the bend" (column 2, lines 61-63), but without bending or other distortion in the flat sections adjacent the sharp bends (col. 1, lines 40-67). Examples of this are shown in Figs. 6A-6I.

Bending a glass sheet in a single line is not difficult and does not require complex control of the bending parameters (e.g., heating time and temperature). The main concern expressed in Tomozane et al is that distortions can arise in the flat portions adjacent the bend region. According to Tomozane et al, avoiding such distortion is achieved, not by the control of the bend parameters, but by localizing the heating of the glass so that the portion of the glass heated to above its softening point is limited to that region immediately adjacent the bending line L, i.e., the temperature profile is made very sharp adjacent the bending line (col. 7, lines 10-16).

In contrast, the claimed invention involves bending a glass sheet by pressing portions of the heated glass sheet against a bending surface, for example the bending surface of a mold. This can produce three dimensional bends, which requires a complexity of control parameters that is absent in the simple bend line of Tomozane et al. The formulae expressed in the present claims are derived from the recognition that the parameters of this control

should be based on viscous flow. They could not have been achieved or derived from routine experimentation based on the control of the line bends in Tomozane et al.

II. Tomozane et al teaches away from the invention.

As was previously explained, Tomozane et al *teaches away from* heating the portion of the glass sheet being pressed to the claimed viscosity range. Even under *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727 (2007), this is evidence if unobviousness. See also *United States v. Adams*, 383 U.S. 39 (1966), upon which the Court relied in *KSR*.

Tomozane et al discloses turning a flat glass sheet down along a single fold line to produce two *flat* sections that are connected at the bend (column 2, lines 61-63). To this end, the narrow region to be bent is preferentially heated to a viscoelastic temperature (at least 740°C; see column 4, lines 46-51; Figure 1B) along the fold line, but the remainder of the glass sheet is kept at a relatively low temperature as shown in Figure 1B. The glass sheet is then bent at the fold line to produce the two flat portions connected at the fold, as shown in Figure 5. Thus Tomozane et al requires that the portion of the glass sheet being folded *must remain rigid*, to be able to apply a folding moment to the narrow portion of the glass being folded at the fold line. This ***teaches away*** from heating the entire glass sheet to a viscoelastic temperature, or heating the portion of the glass sheet being pressed to a viscoelastic temperature, since the softened glass sheet then could not transfer the required bending moment to the fold line.

III. The claimed invention does not represent the predictable use of prior art elements according to their established functions.

The "Response to Arguments" portion of the outstanding Office Action also deems that because bending glass while controlling the bending conditions to prevent optical defects was known in the art, one would have arrived at the presently claimed formulae in Tomozane

et al through routine experimentation in keeping with this known desire to prevent optical defects.

In response to this point, Applicants recognize that the Supreme Court has held that the predictable use of prior art elements according to their established functions is not patentable. See *KSR Int'l v. Teleflex Inc. supra*. It is respectfully submitted, however, that even if one disregards that fact that Tomozane et al *teaches away* from heating the portion of the glass sheet being pressed, the present invention is not simply a predictable variation of Tomozane et al: i.e., one would not have arrived at the invention through routine experimentation based on Tomozane et al.

Tomozane et al and the prior art in general bend glass according to a *different principle* than does the invention, and so the claimed parameters are not predictable from the prior art and routine experimentation would not lead to the claimed parameters. See In re Antonie, 195 USPQ 6 (CCPA 1977); M.P.E.P. § 2144.05(II)(B) ("routine experimentation" requires that the particular parameter to be optimized is first recognized in the prior art to be a result effective variable). That is, it has been conventional to bend glass by the generation of bending stresses according to the theory of elasticity and a stress relaxation phenomenon peculiar to a viscoelastic body, wherein expansion/contraction is limited to about 1% (paragraph bridging pp. 7-8). Tomozane et al seeks to provide a simple bend along a single line by heating the glass to the viscoelastic region in the vicinity of the bend line, and applying a moment force through the rigid portion of the glass on either side of the bend line. Tomozane et al does not disclose any measure to solve the problems of bendability and mold resistability, due to not using a press.

On the other hand, the bent shape targeted by the present invention may be more complex, i.e., three dimensional bent glass for automobiles. It needs a larger expansion/contraction rate of greater than 1%, which cannot be solved by the conventional

bending technique. In order to cope with this problem, it is necessary to lower the viscosity of a glass sheet to a level not lower than 10^5 Pa·s and not higher than 10^8 Pa·s and to bend the glass sheet according to formulae 1 and 2 by mainly utilizing *viscous flow*. Under such conditions, an elastic effect can be almost ignored, and the law of viscosity is dominant (p. 8, lines 7-22). The present invention can simultaneously solve the problem that bendability and mold resistability can be compatible (p. 7, lines 2-8).

Thus "routine experimentation" based on Tomozane et al would attempt to optimize the control parameters to bending glass by the generation of bending stresses according to the theory of elasticity and a stress relaxation phenomenon peculiar to a viscoelastic body, wherein expansion/contraction is limited to about 1%. Tomozane et al cannot ensure bendability and mold resistability. Even if one were to attempt to limit distortions, this would not lead to control for bending by mainly utilizing viscous flow as is done in the claimed invention, and so such control would not inherently lead to the claimed invention.

Concerning the rejections of several of the dependent claims as being obvious over Tomozane et al in view of Anderson, and/or Hirotsu and Nikander, it is noted that the secondary references were applied to teach features of the dependent claims and would not overcome the shortcomings of Tomozane et al with respect to Claim 1.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

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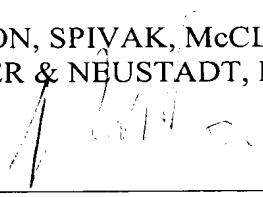

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